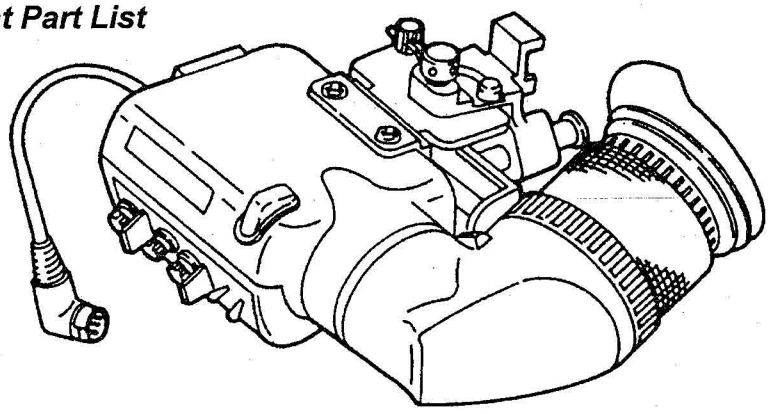
ORDER NO. VSD9904M006
D20

Service Manual

Electronic View Finder

AJ-VF10P/E

Sec.1 Operating Instructions
Sec.2 Disassembly Procedures
Sec.3 Electrical Adjustment
Sec.4 Block Diagrams & Schematic Diagrams & Circuit Board Diagrams
Sec.5 Exploded Views & Replacement Part List



Specifications

Power supply:	DC 9 V, 12 V (supplied by camera)
Power consumption:	2 W

Picture tube:
1.5-inch high-resolution monochrome picture tube
Horizontal resolution:
600 lines (center, typical, 4 : 3 mode)
Image system:
525 lines, 60 fields (AJ-VF10, AJ-VF10P)
625 lines, 50 fields (AJ-VF10E)
External adjustment controls:
Controls (BRIGHT, CONTRAST, PEAKING)
Switches (TALLY HIGH/OFF/LOW, ZEBRA ON/OFF)
Allowable temperature range:
32°F to 104°F (0°C to 40°C)
Allowable humidity range:
85% or less (no condensation)
External dimensions (W×H×D):
8″×2 7/8″×7 5/16″ (202×72×185 mm)
Weight:
1.848 lb (840 g)

Panasonic

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⚠ Warning

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advice non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or death.

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SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal dose not have a return path to the chassis, the reading must be ∞.

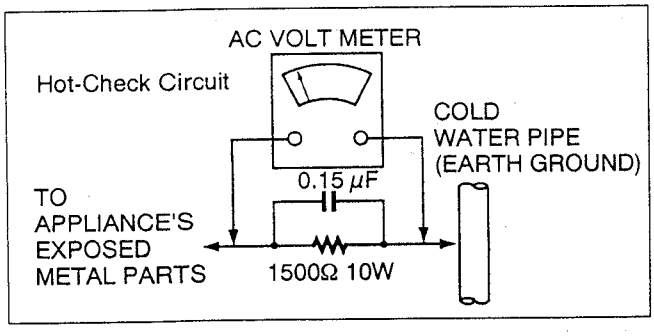

Figure 1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, in parallel with 0.15μF capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (most replacement ES devices are packaged with leads electrically shorted together by conductive foam. aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION:Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices.(Otherwise harmless mother such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-Radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

NOTE:It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ±0.15kV. If the meter indication is out of tolerance, immediate service ahd correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

SECTION 1

OPERATING INSTRUCTIONS

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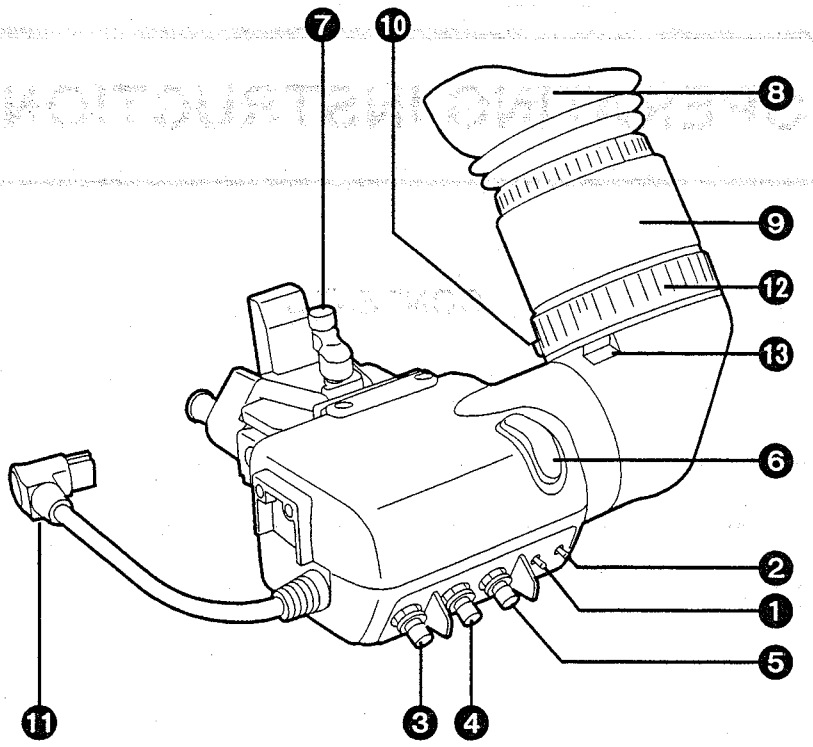
Parts and Their Functions



❶ ZEBRA (Zebra Pattern) Switch

Displays a zebra pattern inside the viewfinder.

ON: Displays a zebra pattern.

OFF: No zebra pattern displayed.

The details of the display, such as the type of zebra pattern, will differ depending on the camera used with the viewfinder. Refer to the instruction manual of the camera for details.

❷ TALLY Switch

Controls the tally lamp.

HIGH: Makes the tally lamp brighter.

OFF: Turns the tally lamp off.

LOW: Makes the tally lamp dimmer.

❸ PEAKING Knob

Adjusts the outlines of the images in the viewfinder to make focusing easier. The setting of this control has no effect on the output signal of the camera.

❹ CONTRAST Knob

Adjusts the contrast of the screen inside the viewfinder. The setting of this control has no effect on the output signal of the camera.

Parts and Their Functions

❺ BRIGHT (Brightness) Knob

Adjusts the brightness of the screen inside the viewfinder. The setting of this control has no effect on the output signal of the camera.

❻ Tally Lamp

Lights when the VTR is recording and the TALLY switch is set to HIGH or LOW. Also, flashes on and off as a warning indication, in the same manner as the REC lamp, inside the viewfinder.
The brightness of the tally lamp is controlled by the setting of the TALLY switch (HIGH or LOW).

❼ Viewfinder Forward-Backward/Left-Right Position Clamp Lever

Loosen this lever to adjust the viewfinder position in the forward, backward, right or left direction.

❽ Eyecup

❾ Eyecup Forward-Backward Movement Ring

Turn this ring to adjust the position of the eyecup in the forward-backward direction.

❿ Diopter Adjustment Knob

Adjust this control to match the view of the person using the camera so that the image on the screen in the viewfinder is as clear as possible.

⓫ Connection Plug

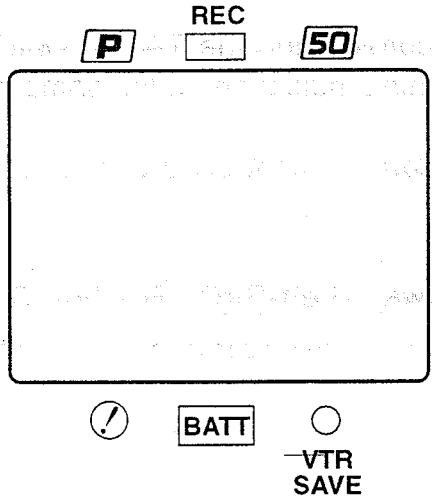
⓬ Lock Ring

⓭ Lock Button

Parts and Their Functions

Internal LEDs

The lamp and picture tube indications will differ depending on the camera used with the viewfinder.
Refer to the instruction manual of the camera for details.



Adjusting the Viewfinder

Adjusting the Mounting Height of the Viewfinder

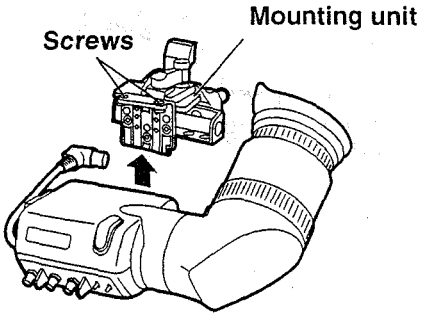
The mounting height of the viewfinder will differ depending on the camera on which it is mounted.
Adjust the mounting height to match the camera on which the viewfinder is to be mounted.

Camera model number		Mounting position
NTSC regions **AJ-D810, AJ-D810A, AJ-D900W, AJ-D900WA, AJ-D910WA, AJ-PD900W, AJ-PD900WA**	PAL regions **AJ-D900W, AJ-D900WA, AJ-D910WA**	**Factory setting** No adjustment of the mounting height is necessary.
NTSC regions **AJ-D700, AJ-D700A**	PAL regions **AJ-D700, AJ-D700A, AJ-D800, AJ-D800A**	**Change to position Ⓐ**

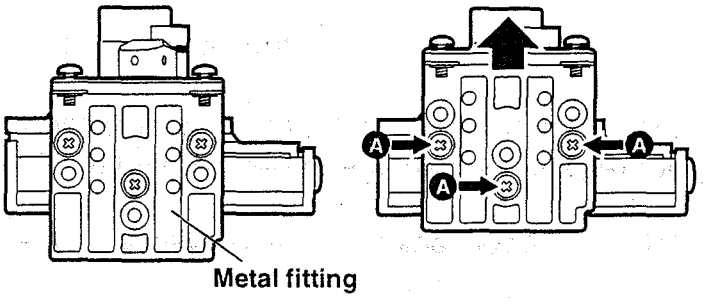
For camera models other than those listed above, please refer to the camera's instruction manual.

• Adjusting the height of the mounting unit

1. Detach the two screws, the detach the mounting unit.

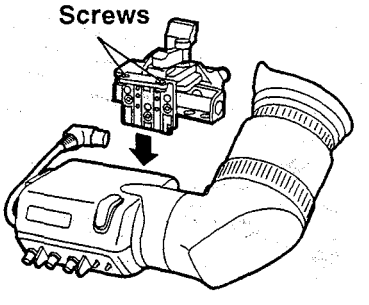


2. Replace the three screws in the positions indicated as Ⓐ from the present positions and change the position of the metal fitting.



Re-fix the metal fitting by fastening the screws together with the spring washer.

3. Secure the mounting unit in place with the two screws.



Adjusting the Viewfinder

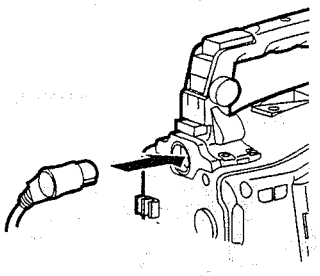
Mounting the Viewfinder

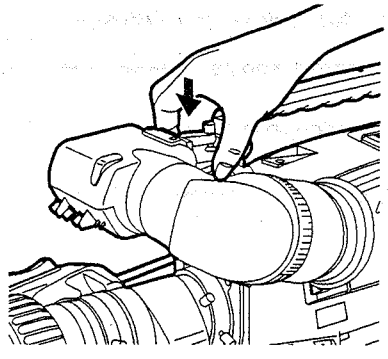
1. Confirm that the POWER switch of the camera is "OFF".

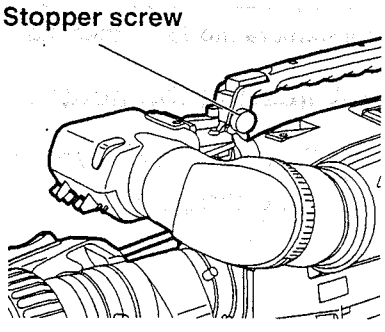
2. Insert the plug into the connection jack of the viewfinder.
   <Note>
   Be sure to insert the plug all the way into the connection jack.

3. Push the viewfinder down into place.

4. Tighten the stopper screw firmly.





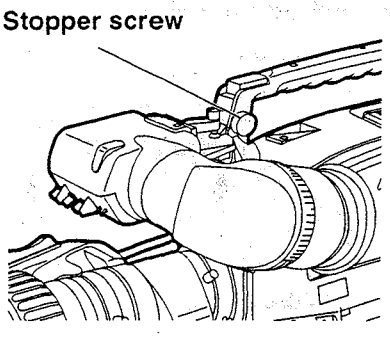


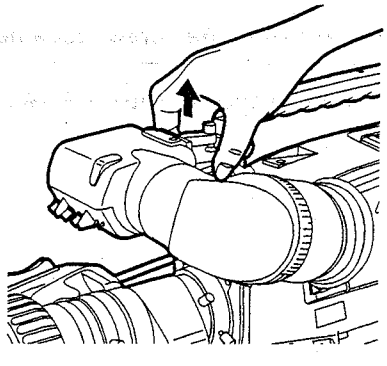
Detaching the Viewfinder

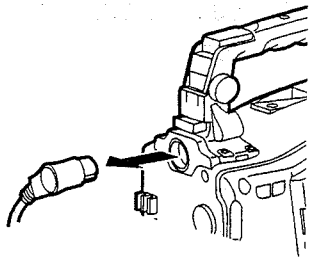
1. Confirm that the POWER switch of the camera is "OFF".

2. Loosen the stopper screw and detach the viewfinder by pulling it straight up.
   <Note>
   Use both hands to detach the viewfinder. The viewfinder may not detach smoothly with one hand, resulting in damage to the viewfinder.

3. Disconnect the connection jack from the viewfinder cable connector.



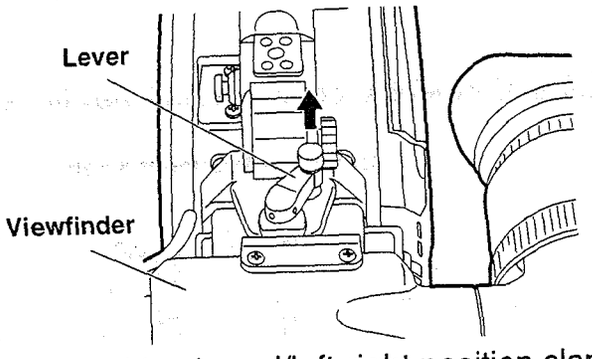




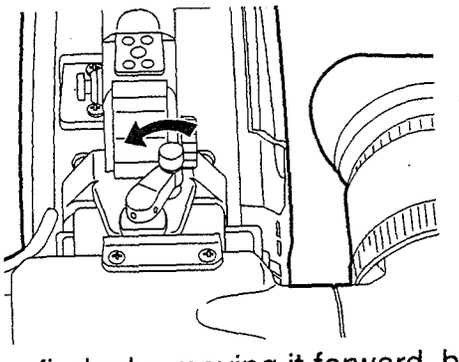
Adjusting the Viewfinder

Position Adjustment

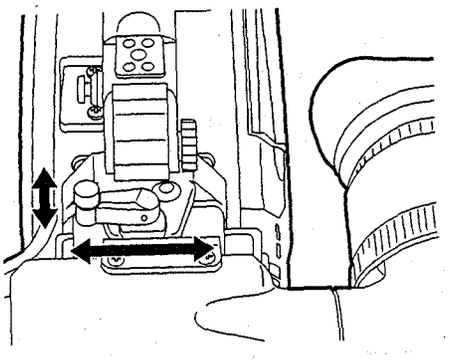
1. Lift up the viewfinder forward-backward/left-right position clamp lever to disengage the lock.



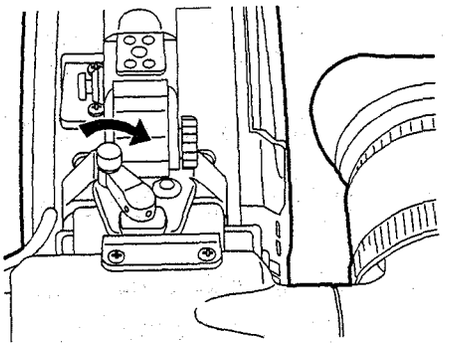
2. Loosen the viewfinder forward-backward/left-right position clamp lever.



3. Adjust the position of the viewfinder by moving it forward, backward, left or right.



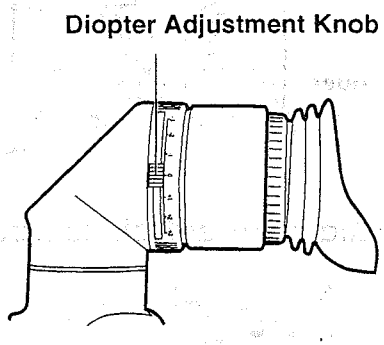
4. Return the viewfinder forward-backward/left-right position clamp lever to the locked position.



Adjusting the Viewfinder

Diopter Adjustment

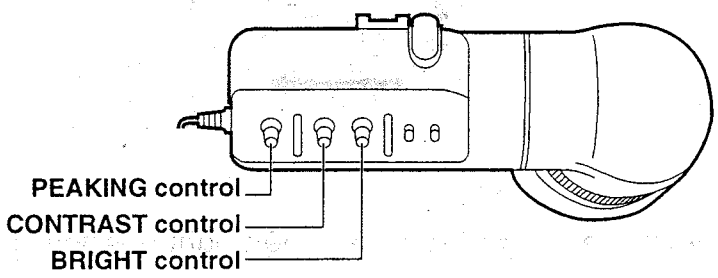
1. Set the POWER switch of the camera to "ON". A picture will appear in the viewfinder.
2. Turn the diopter adjustment knob so that the viewfinder picture can be clearly seen.



Screen Adjustment

Adjust the condition of the viewfinder screen.

Brightness: Adjust the BRIGHT control.
Contrast: Adjust the CONTRAST control.
Contour: Adjust the PEAKING control.

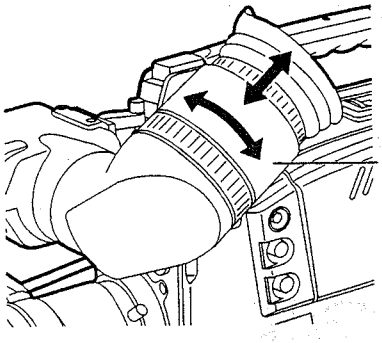


1. Set the POWER switch of the camera to "ON".
2. Set the OUTPUT switch of the camera to "BAR".
3. Turn the viewfinder BRIGHT and CONTRAST controls to adjust the picture brightness and contrast.
   Turning the PEAKING control makes the picture appear sharper.
   A sharper picture facilitates focusing the lens.

Adjusting the Viewfinder

Eyecup Position Adjustment

Turn the eyecup forward-backward movement ring to adjust the eyecup in the forward-backward direction.



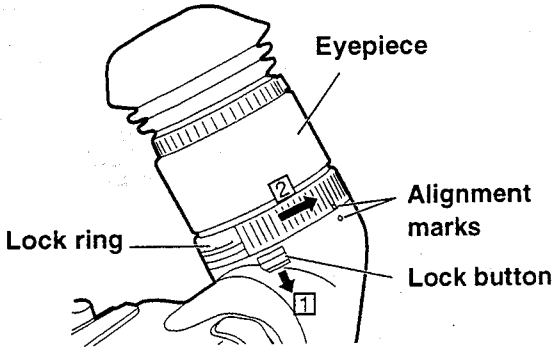
Detaching the Eyecup

If dust has adhered to the CRT screen or mirror, detach the eyecup and remove it.

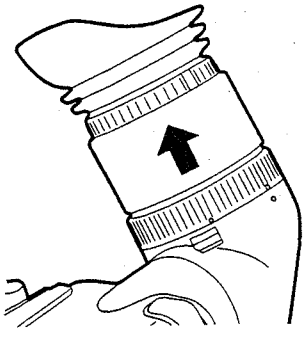
<Note>

Do not wipe the mirror surface under any circumstances as it has been specially treated. Dust which has adhered to the mirror should be blown away with a blower, etc.

1. Press the lock button.
2. Turn the lock ring as far as possible in the clockwise and counterclockwise directions to line up the alignment marks on the lock ring and viewfinder barrel.



3. Detach the eyecup.



Remounting the Eyecup

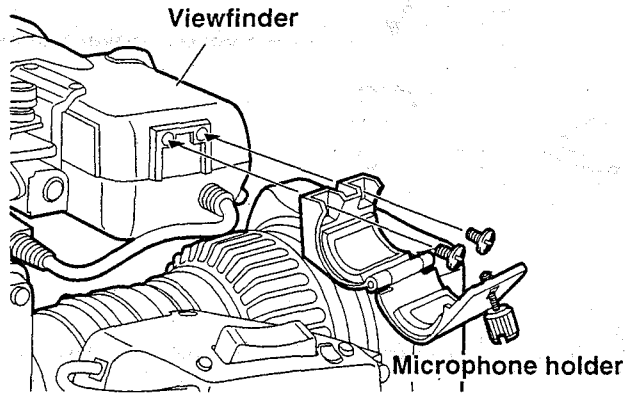
1. Line up the alignment marks on the lock ring and the viewfinder barrel and slide the eyecup back into place.
2. Turn the eyepiece as far as possible in the clockwise direction so that the lock button engages with an audible click. This completes the remounting procedure.

Mounting the Microphone

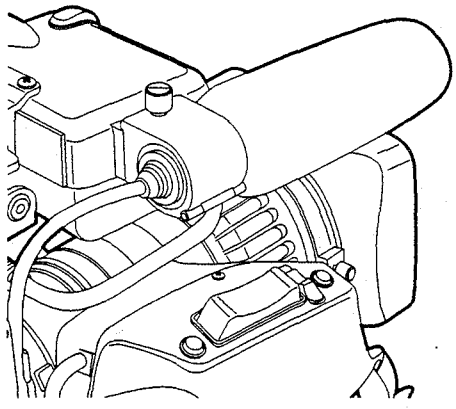
Follow the steps below to install the AJ-MC700P microphone kit (sold separately).

- Please refer to the instruction manual of the microphone holder.

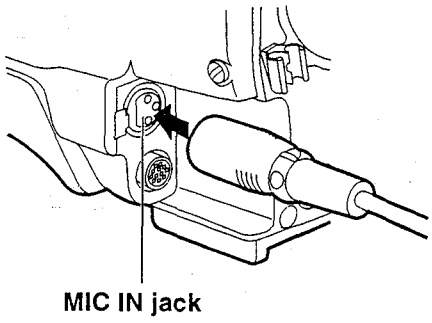
1. Attach the microphone holder.



2. Mount the microphone.



3. Plug the microphone connector cable into the MIC IN jack.



SECTION 2

Disassembly Procedures

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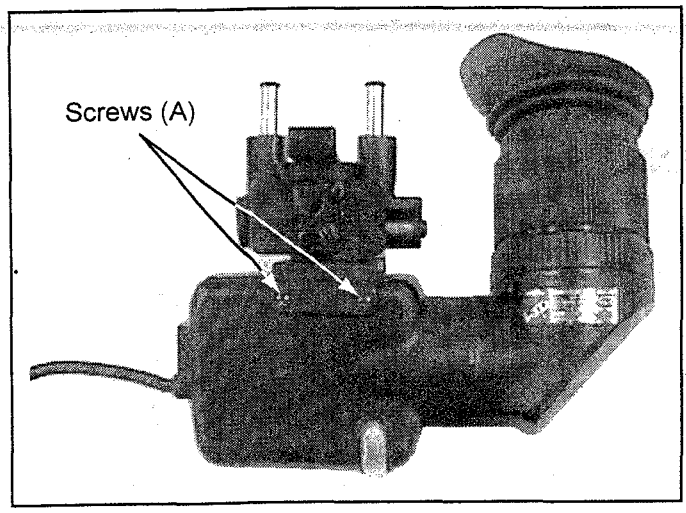
Disassembly Procedures

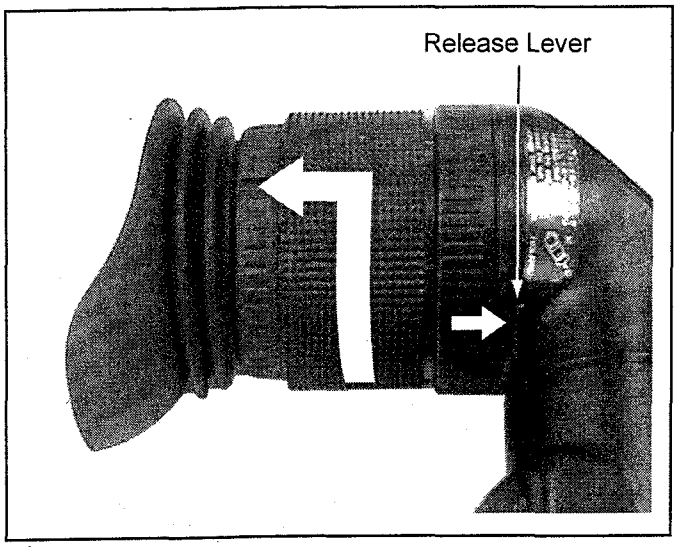
1. Removal of the Slide Mechanism Unit

1. Remove the 2 screws (A).
2. Remove the Slide Mechanism Unit.



2. Removal of the Eyecup

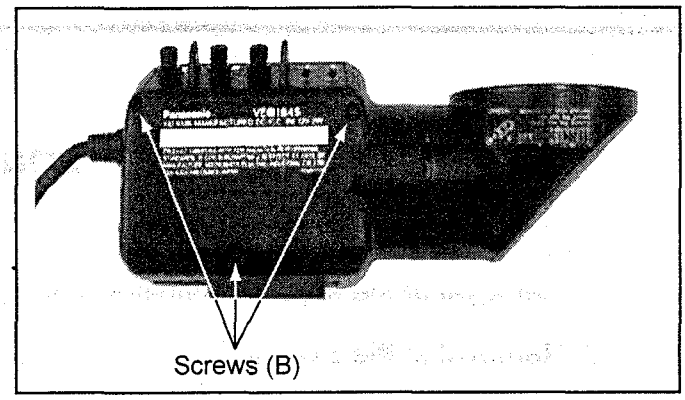
1. Push the release lever to the direction of arrow.
2. Turn the Eyecup to the direction of arrow, and pull out it.



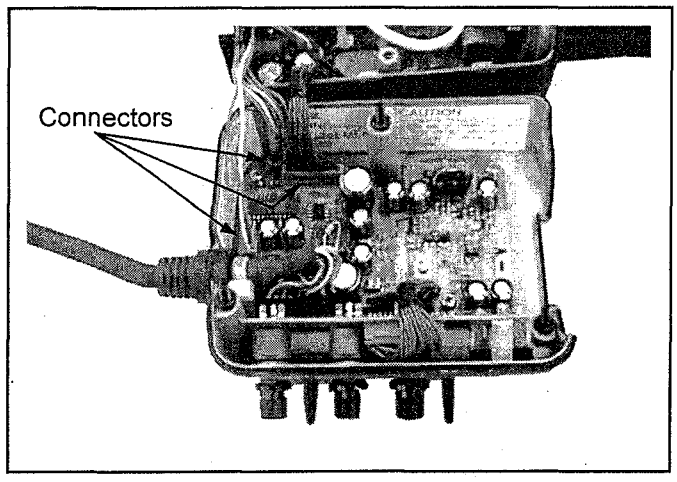
Note:
After the removal of the Eye-Piece, please don't touch the reflecting mirror because of the surface of the mirror will go bad.

3. Removal of the Top Panel

1. Remove the 3 screws (B).
2. Open the Top Panel carefully.

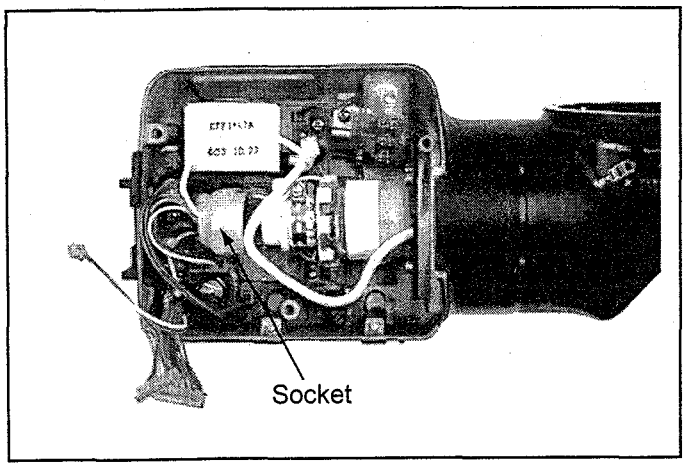


3. Disconnect the 3 connectors and remove the Top Panel.

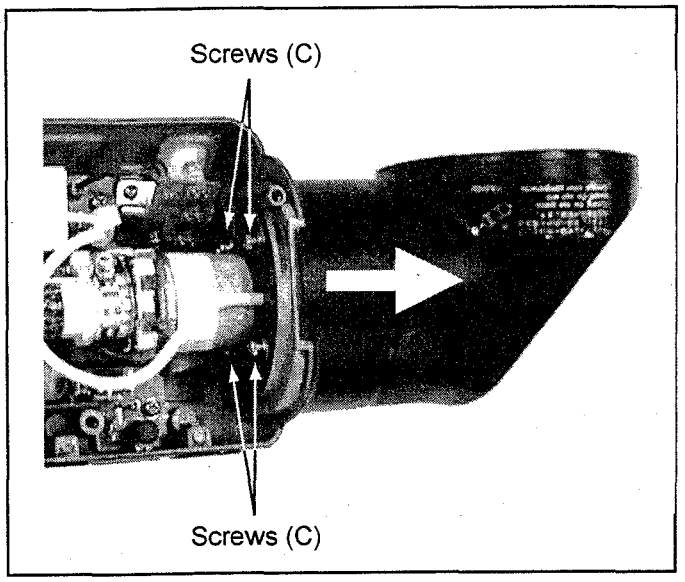


4. Removal of the CRT Unit

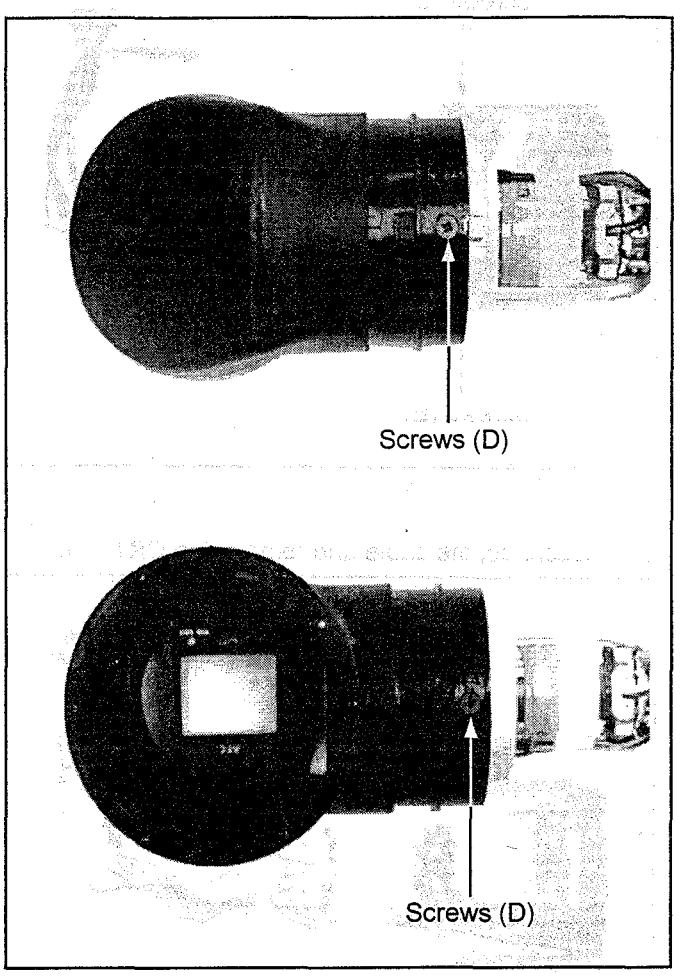
1. Cut the 2 tie-wraps which bundle up cables.
2. Remove the socket.



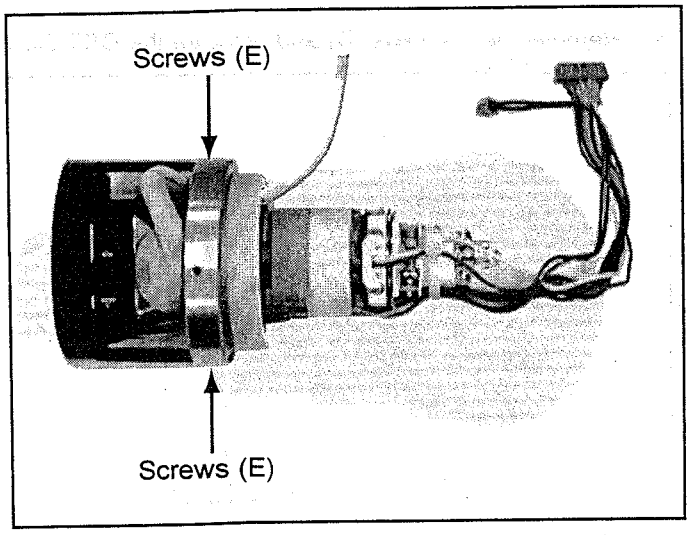
3. Remove the 4 screws (C) and pull out the CRT Unit to the direction of arrow.



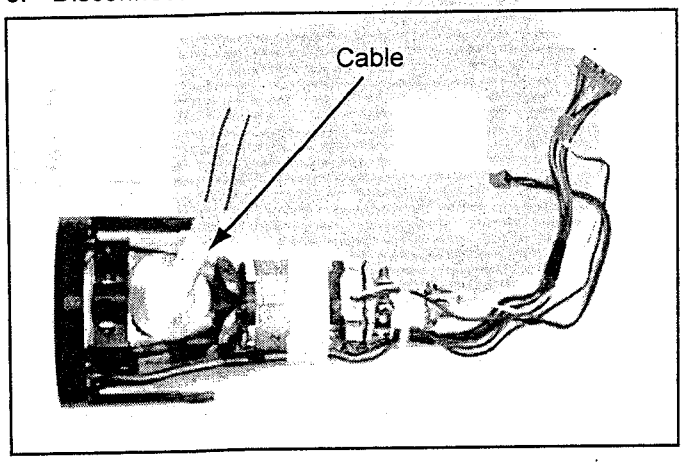
4. Remove the 2 screws (D) and remove the CRT Case.



5. Remove the 2 screws (E).



6. Disconnect the cable and remove the CRT Unit.



SECTION 3

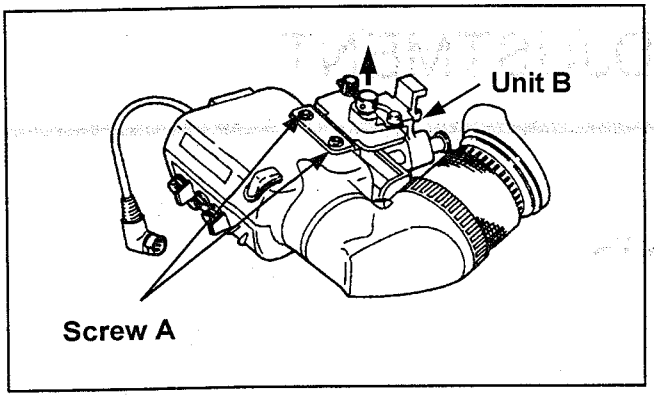
ELECTRICAL ADJUSTMENT

CONTENTS

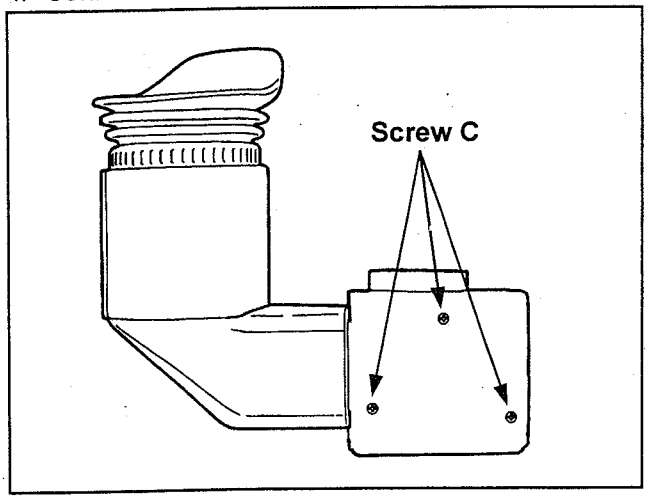
3-1. Preparation 3-1
3-2. H Free Run Adjustment 3-1
3-3. V Free Run Adjustment 3-1
3-4. Sub Bright Adjustment 3-1
3-5. Rotation Adjustment 3-2
3-6. Centering Adjustment 3-2
3-7. Size Adjustment 3-3
3-8. V Linearity Adjustment 3-3
3-9. Balance Adjustment 3-3
3-10. Bright Adjustment 3-3
3-11. Focus Adjustment 3-3

3-1. Preparation

1. Remove two **screws A** to pull off the unit B.



2. Remove three **screws C** at bottom side.
3. Open bottom case.
4. Connect EVF cable with AJ-D700.



3-2. H Free Run Adjustment

BOARD	VIDEO
SPEC.	15.75±0.1kHz (NTSC) 15.625±0.1kHz (PAL)
TEST	TP9102 (H Def Board)
ADJUST	VR9001
M.EQ	Frequency Counter

1. Adjust the **VR9001** so that the frequency at the **TP9102** is within specification without input signal.

3-3. V Free Run Adjustment

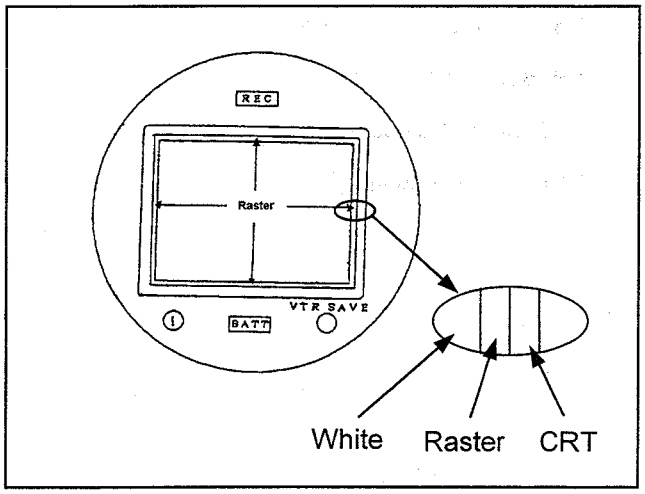
BOARD	VIDEO
SPEC.	54±0.5Hz (NTSC) 46±1.0Hz (PAL)
TEST	TP9002
ADJUST	VR9002
M.EQ	Frequency Counter

1. Adjust the **VR9002** so that the frequency at the **TP9002** is within specification without input signal.

3-4. Sub Bright Adjustment

BOARD	H Def
TEST	EVF Picture
ADJUST	VR9103
CHART	90% White

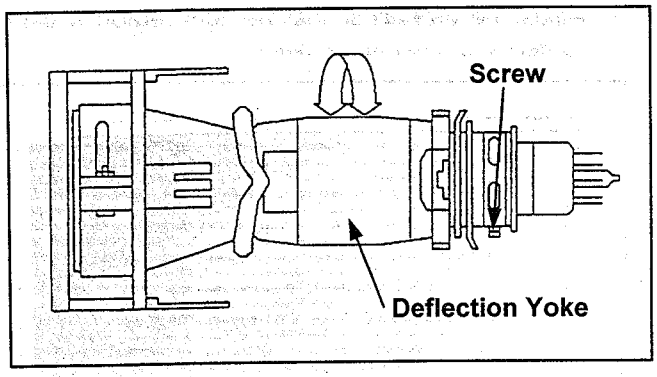
1. Set BRIGHT VR to MAX, CONTRAST VR to MAX and PEAKING VR to MIN.
2. Adjust the **VR9103** so that raster slightly appears.

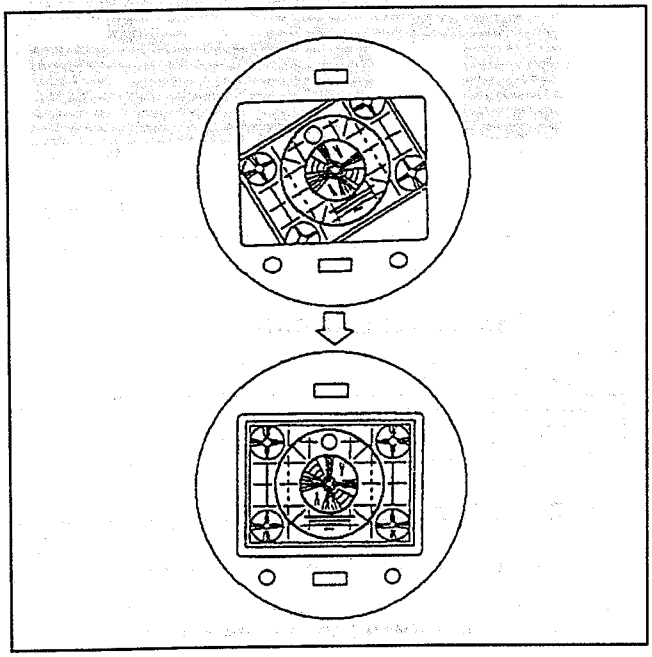


3-5. Rotation Adjustment

TEST	EVF Picture
ADJUST	Deflection Yoke
CHART	Registration Chart

1. Loosen the screw and rotate Deflection Yoke so that the picture stands horizontally.
2. Tighten the screw again.

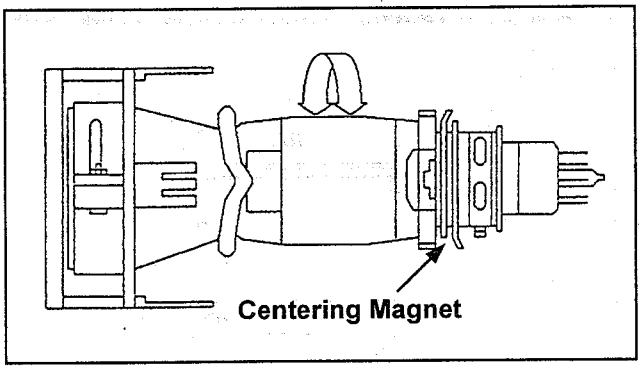


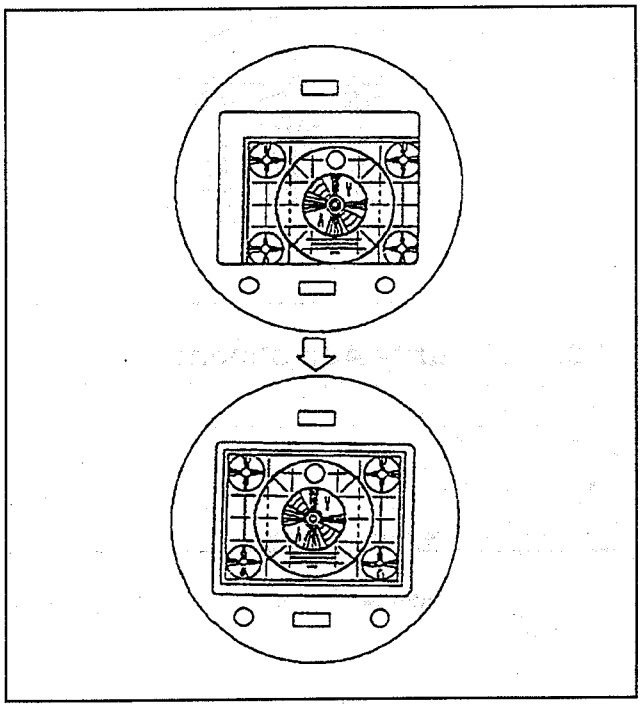


3-6. Centering Adjustment

BOARD	H Def
TEST	EVF Picture
ADJUST	Centering Magnet
CHART	Registration Chart

1. Set BRIGHT VR to MAX, CONTRAST VR to MAX and PEAKING VR to MIN.
2. Rotate Centering Magnet so that the picture stands at the center.

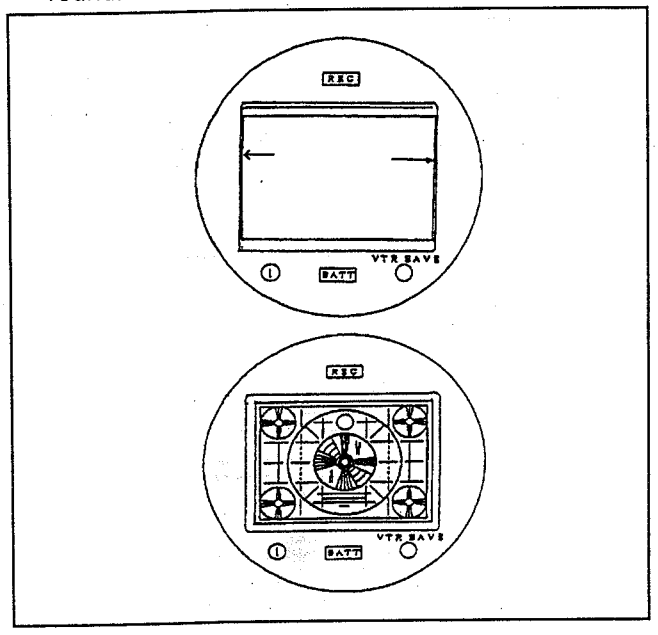




3-7. Size Adjustment

BOARD	H Def, VIDEO
TEST	EVF Picture
ADJUST	VR9101(H DEF), VR9003(VIDEO)
CHART	Registration Chart

1. Set BRIGHT VR to MAX, CONTRAST VR to MAX and PEAKING VR to MIN.
2. Adjust the **VR9101** so that the picture is maximized.
3. Repeat Rotation and Centering adjustments slightly in case of need.
4. Adjust the **VR9003** so that the circle of chart is most round.



3-8. V Linearity Adjustment

BOARD	VIDEO
TEST	EVF Picture
ADJUST	VR9004
CHART	Registration Chart

1. Adjust the **VR9004** so that the circle of chart is most round.

3-9. Balance Adjustment

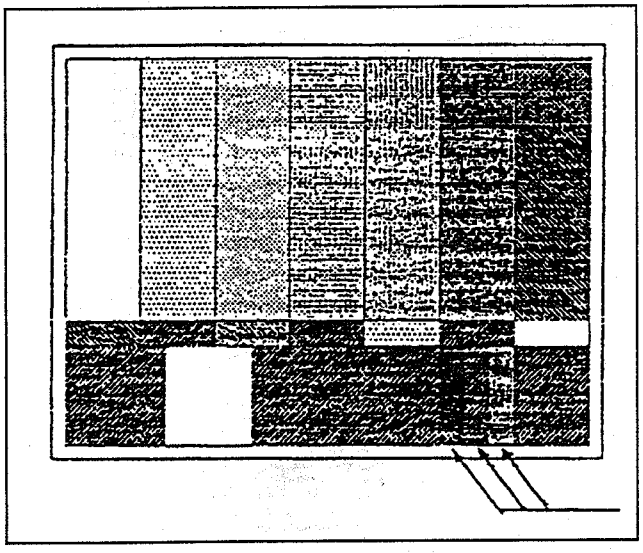
TEST	EVF Picture
ADJUST	Deflection Yoke Centering Magnet VR9003, VR9101
CHART	Registration Chart

1. Fine-adjust Rotation, Centering, Size (Vertical) and V Linearity.

3-10. Bright Adjustment

BOARD	VR.SW
TEST	EVF Picture
ADJUST	VR9301
CHART	Color Bar (SMPTE)

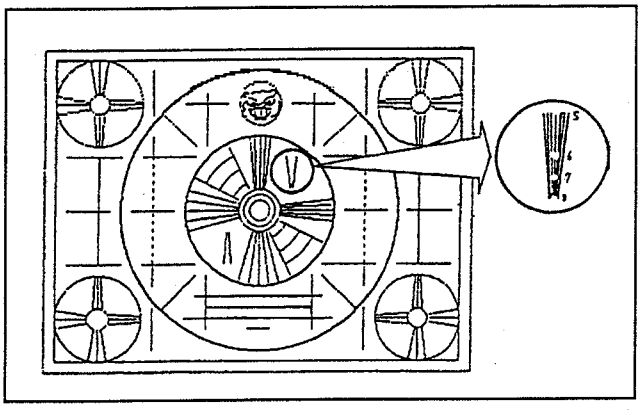
1. Set CONTRAST VR to MAX and PEAKING VR to MIN.
2. Monitor the three regions indicated by arrow.
3. Adjust the **VR9301** so that the right region is slightly lighted and other two is black.



3-11. Focus Adjustment

BOARD	H DEF
TEST	EVF Picture
ADJUST	VR9102
CHART	Registration Chart

1. Set CONTRAST VR to MAX and PEAKING VR to MIN.
2. Adjust the **VR9102** so that resolution is best.



SECTION 4

BLOCK DIAGRAM & SCHEMATIC DIAGRAMS & CIRCUIT BOARD DIAGRAMS

CONTENTS

BLOCK DIAGRAM

EVF BLOCK DIAGRAM BLK-1

SCHEMATIC DIAGRAMS

INTER CONNECTION SCM001

VIDEO SCM002

H DEF SCM003

CRT MASK SCM004

VR SW SCM005

F TALLY SCM006

CIRCUIT BOARD DIAGRAMS

VIDEO P.C.BOARD (VEP29022A) CBA-1

H DEF P.C.BOARD (VEP29019A) CBA-1

CRT MASK P.C.BOARD (VEP29023A) CBA-1

F TALLY P.C.BOARD (VEP29021A) CBA-1

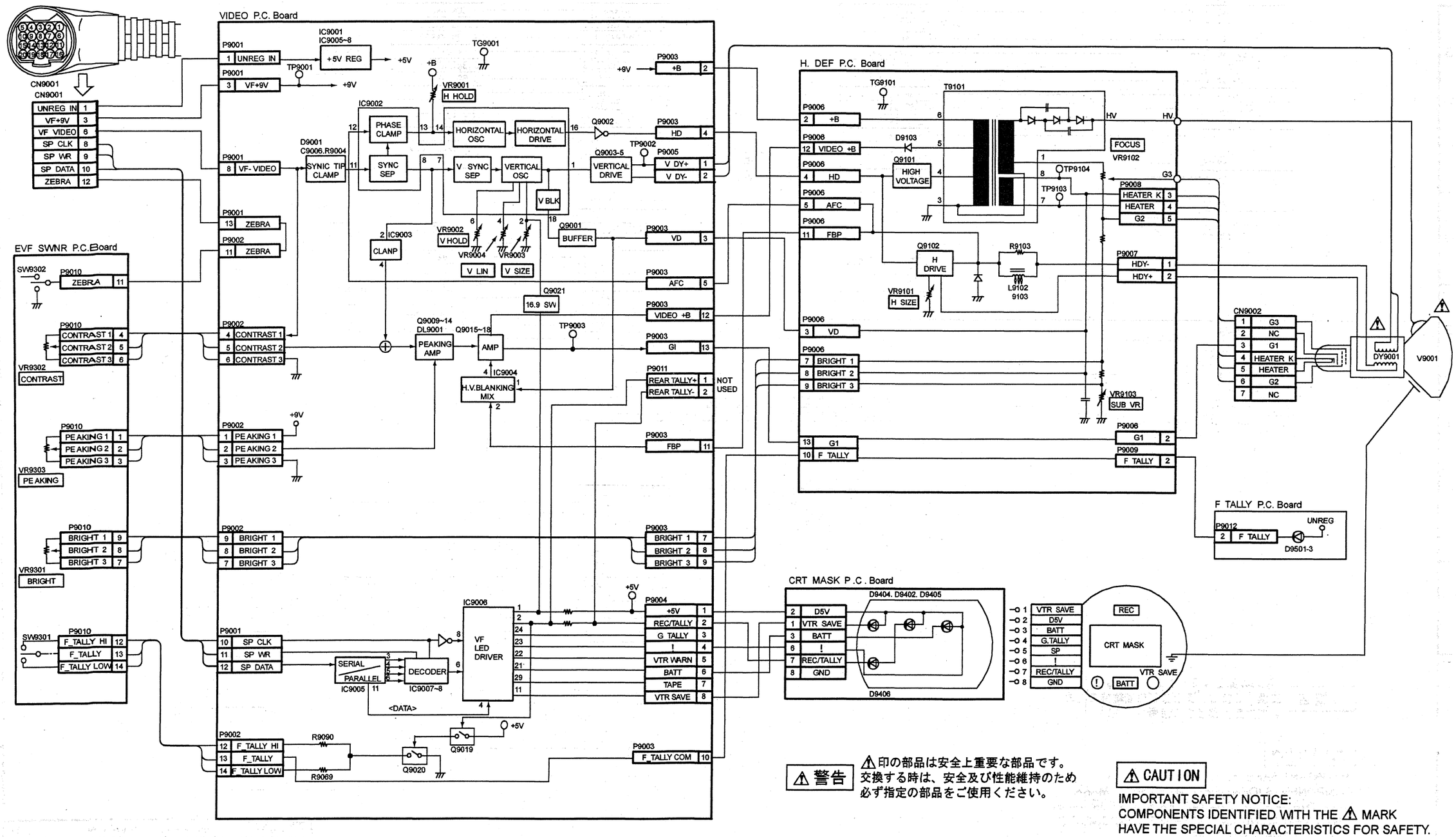
VR SW P.C.BOARD (VEP29020A) CBA-1

IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST.
AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WASPREPARED.

EVF BLOCK DIAGRAM



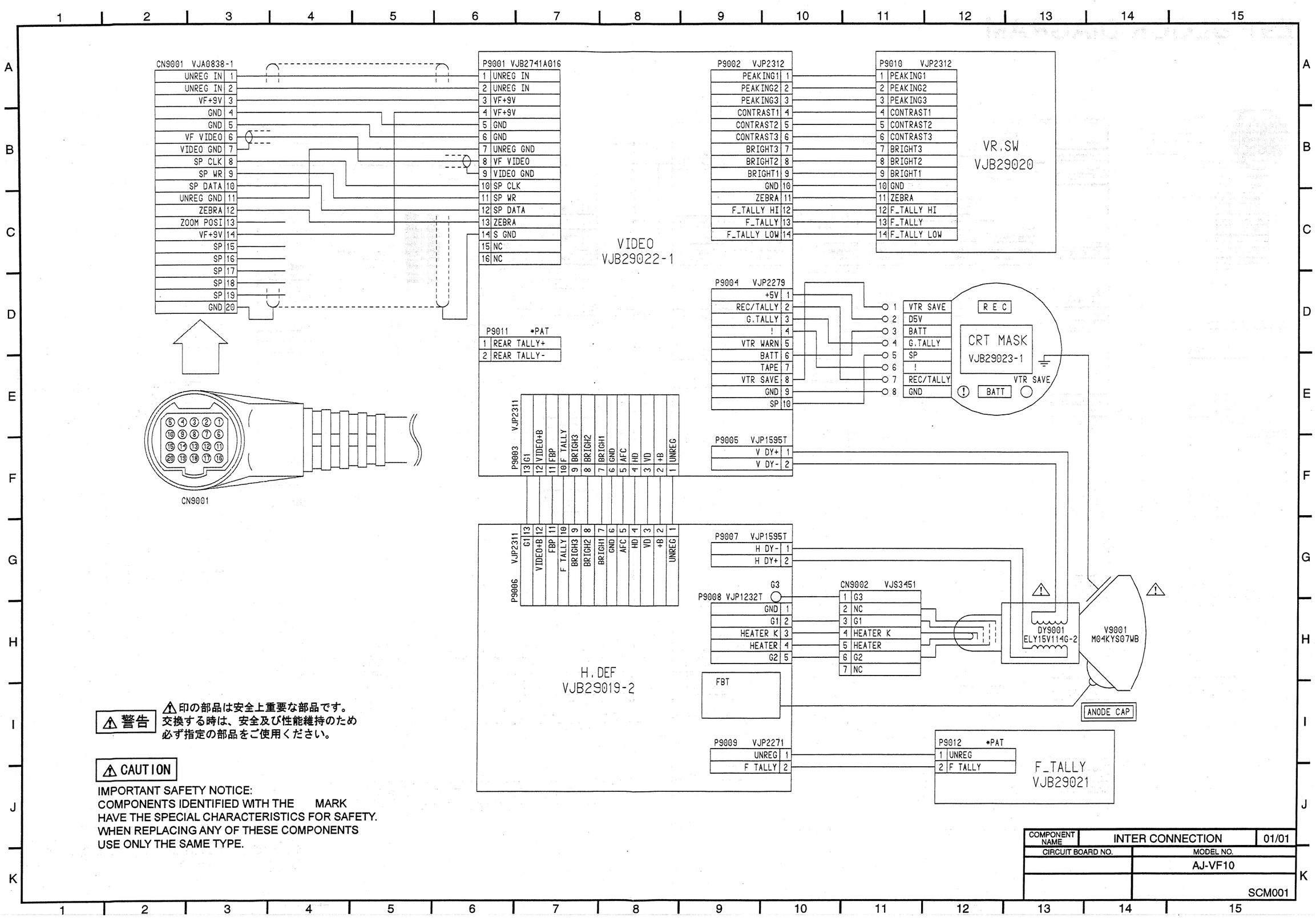
⚠ 警告

⚠印の部品は安全上重要な部品です。
交換する時は、安全及び性能維持のため
必ず指定の部品をご使用ください。

⚠ CAUTION

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE ⚠ MARK
HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY THE SAME TYPE.

BLK-1



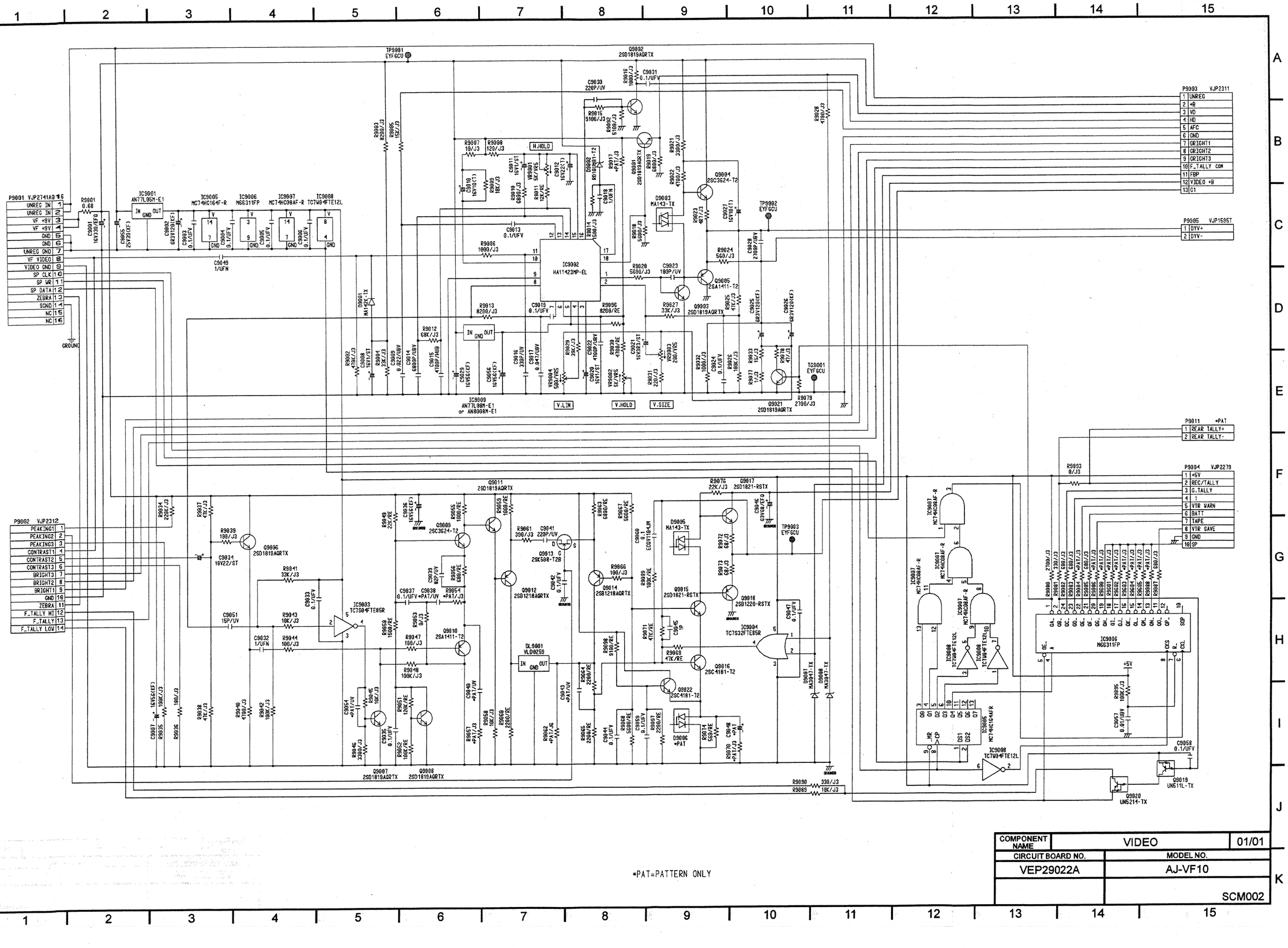
⚠警告

⚠印の部品は安全上重要な部品です。
交換する時は、安全及び性能維持のため
必ず指定の部品をご使用ください。

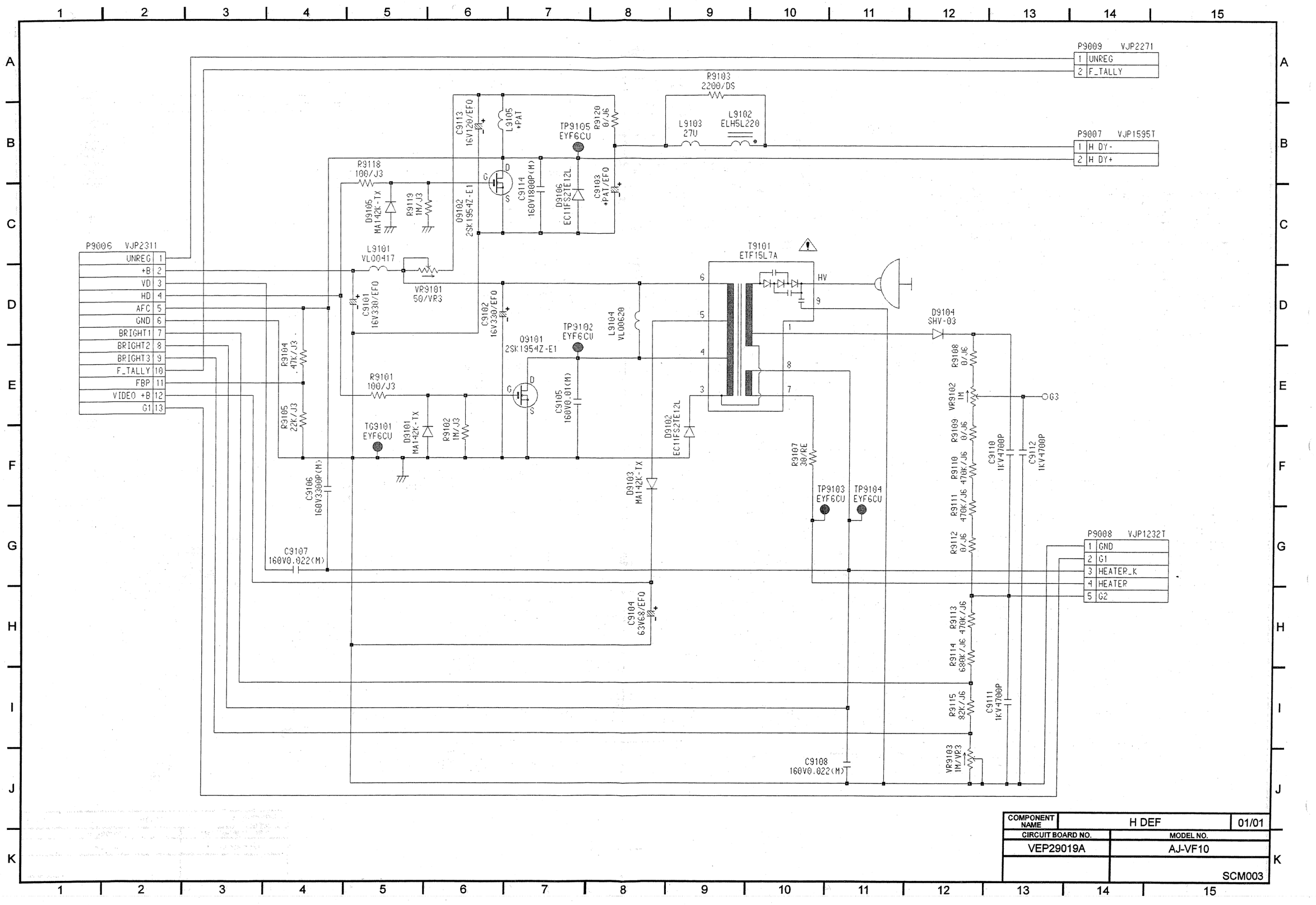
⚠ CAUTION

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE ⚠ MARK
HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY THE SAME TYPE.

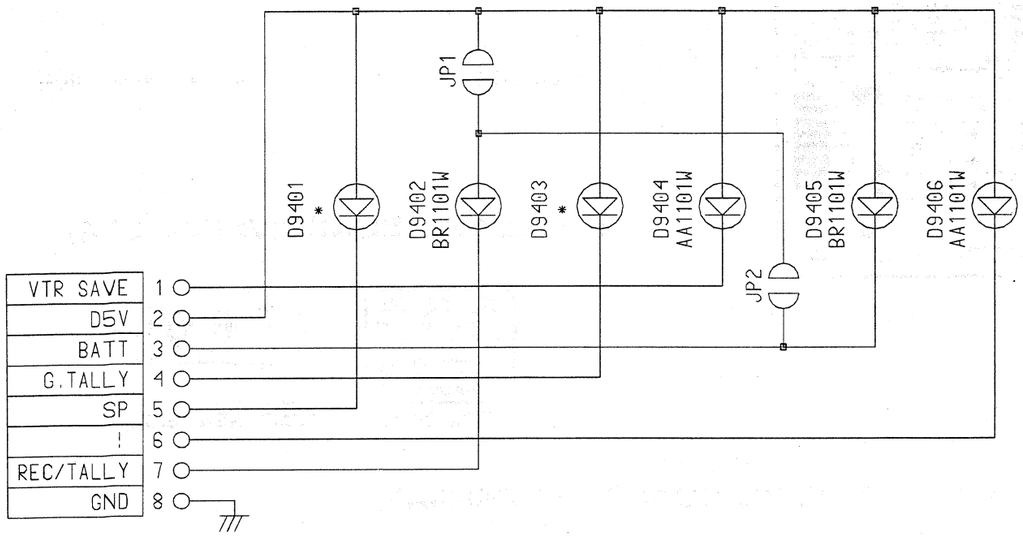
COMPONENT NAME	INTER CONNECTION	01/01
CIRCUIT BOARD NO.	MODEL NO.	
	AJ-VF10	
		SCM001



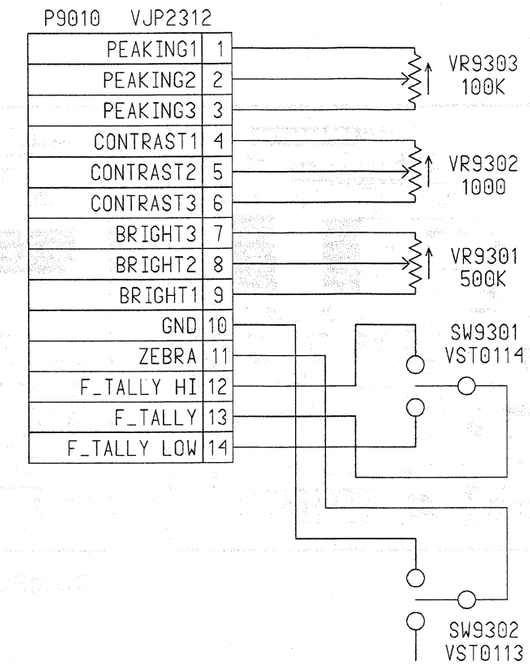
COMPONENT NAME	VIDEO	01/01
CIRCUIT BOARD NO.	MODEL NO.	
VEP29022A	AJ-VF10	
		SCM002

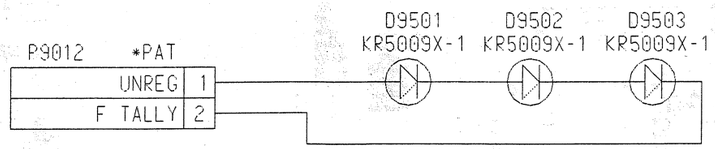


COMPONENT NAME	H DEF	01/01
CIRCUIT BOARD NO.	MODEL NO.	
VEP29019A	AJ-VF10	
		SCM003



	D211	H90
D9401	*PAT	AA1101W
D9403	*PAT	PG1101W



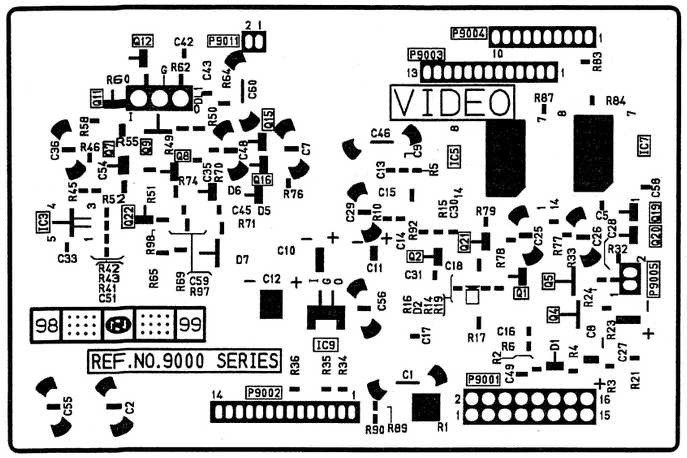


COMPONENT NAME	VR SW	01/01
CIRCUIT BOARD NO.	MODEL NO.	
VEP29020A	AJ-VF10	
		SCM005

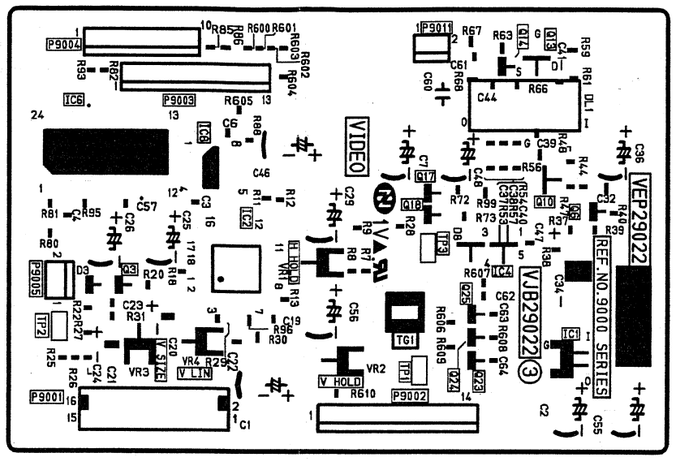
COMPONENT NAME	CRT MASK	01/01
CIRCUIT BOARD NO.	MODEL NO.	
VEP29023A	AJ-VF10	
		SCM004

COMPONENT NAME	F TALLY	01/01
CIRCUIT BOARD NO.	MODEL NO.	
VEP29021A	AJ-VF10	
		SCM006

VIDEO P.C.BOARD(VEP29022A)

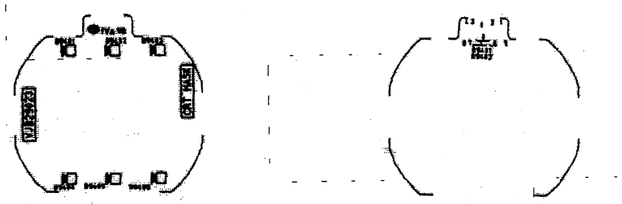


(FOIL SIDE)



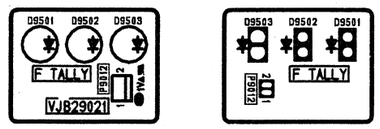
(COMPONENT SIDE)

CRT MASK P.C.BOARD(VEP29023A)



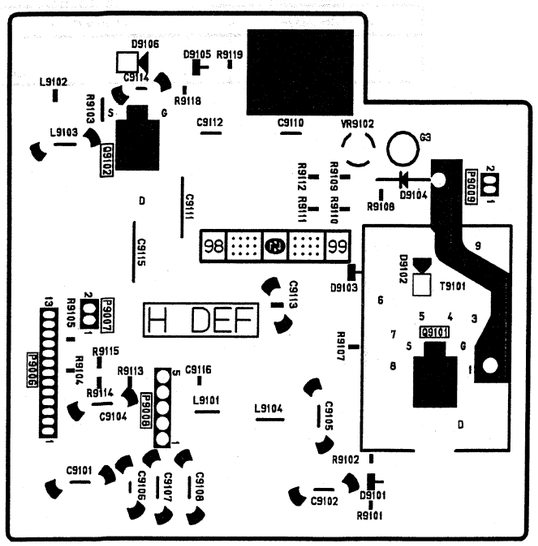
(FOIL SIDE) (COMPONENT SIDE)

F TALLY P.C.BOARD(VEP29021A)

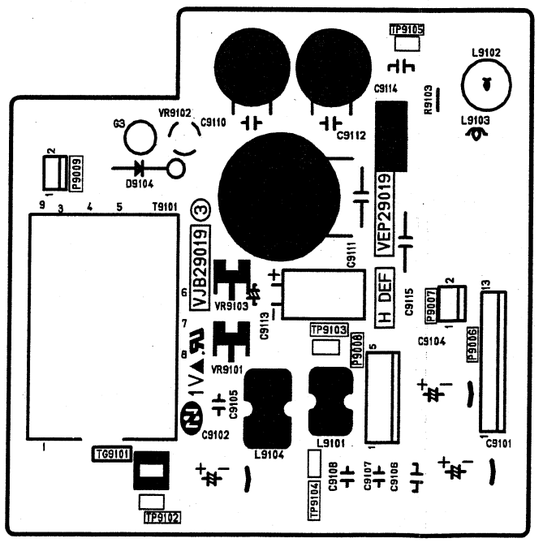


(FOIL SIDE) (COMPONENT SIDE)

H DEF P.C.BOARD(VEP29019A)

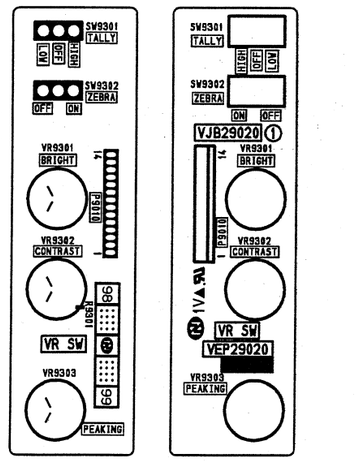


(FOIL SIDE)



(COMPONENT SIDE)

VR SW P.C.BOARD(VEP29020A)



(FOIL SIDE) (COMPONENT SIDE)

SECTION 5

EXPLODED VIEWS & PART LIST

Note:
1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS, all capacitors are in MICROFARADS (μF), P=μμ F.
3. The P.C.Board units marked with "■" shown below the main assembled parts.
4. The parts marked with Ⓔ on the exploded view show the electric parts.
5. IMPORTANT SAFETY NOTICE
   Components identified with the mark < ! >have the special characteristics for safety. When replacing any of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
   After the discontinuation of this assembly in production, if will no longer be available.

<<Abbreviations for part>>

<NAME>	<DESCRIPTIONS>
C. CAPACITOR	: CERAMIC CAPACITOR
C. CAPACITOR CH	: CERAMIC CHIP CAPACITOR
E. CAPACITOR	: ELECTRLYIC CAPACITOR
G. CAPACITOR	: GLASS CAPACITOR
M. CAPACITOR	: MICA CAPACITOR
P. CAPACITOR	: PLASTIC FILM CAPACITOR
S. CAPACITOR	: SEMI-CONDUCTOR CAPACITOR
T. CAPACITOR	: TANTALUM CAPACITOR
TRIMMER	: TRIMMER
C. RESISTOR	: CARBON RESISTOR
F. RESISTOR	: FUSE RESISTOR
M. RESISTOR	: METAL OXSIDE RESISTOR
M. RESISTOR CH	: METAL OXSIDE CHIP RESISTOR
S. RESISTOR	: SOLID RESISTOR

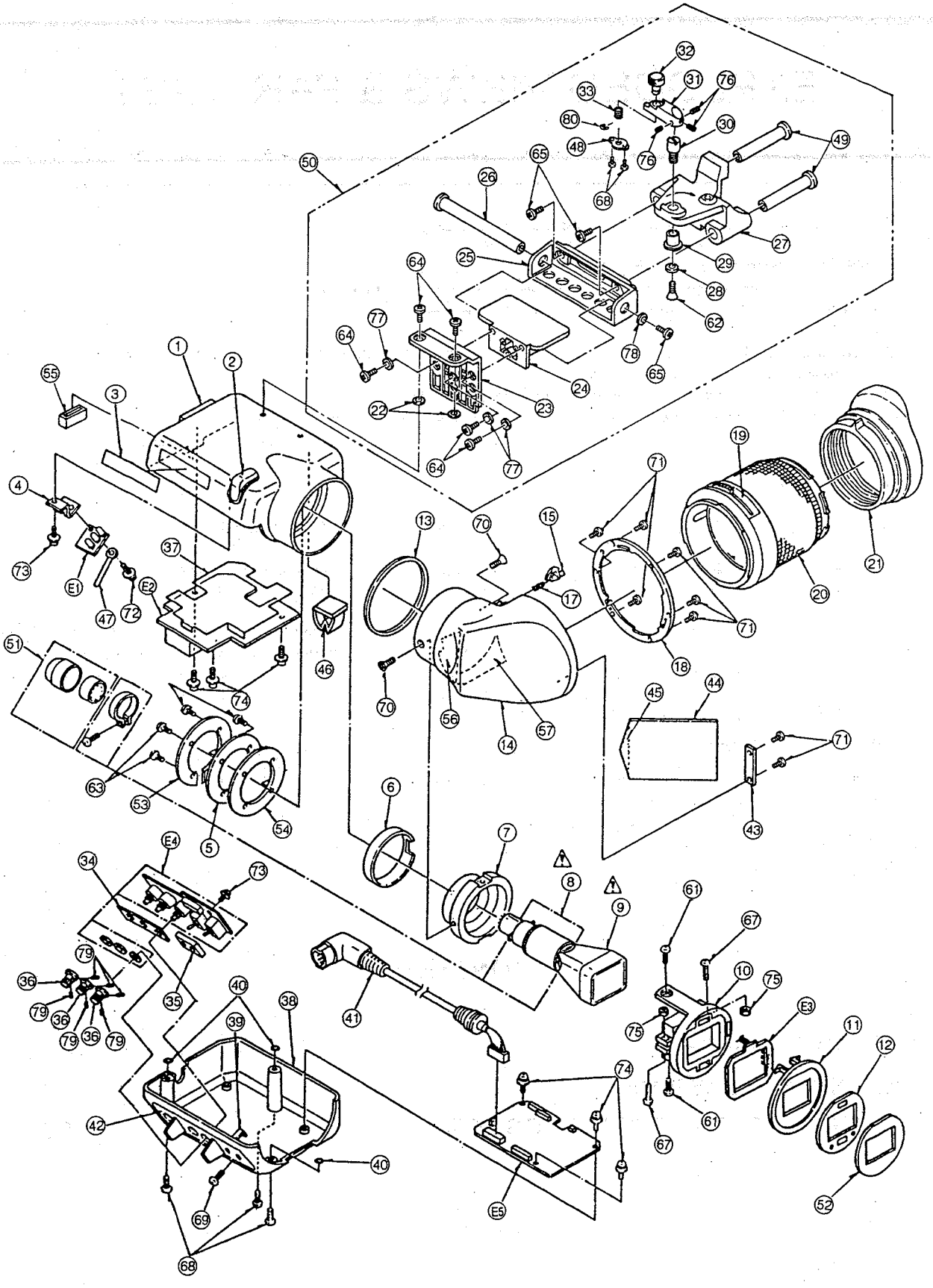
<NAME>	<DESCRIPTIONS>
V. RESISTOR	: VARIABLE RESISTOR
W. RESISTOR	: WIRE WOUND RESISTOR
COMBI. TR-R	: TRANSISTOR-RESISTOR COMBINATION PARTS
COMBI. R-R	: RESISTOR-RESISTOR COMBINATION PARTS
COMBI. C-R	: CAPACITOR-RESISTOR COMBINATION PARTS
COMBI. C-R-R	: CAPACITOR-RESISTOR-COIL COMBINATION PARTS
P.C. BOARD	: PRINTED CIRCUIT BOARD
W/COMPONENT	: WITHCOMPONENT

CONTENTS

EVF PARTS ASSEMBLY PRT-1
PACKING PRATS ASSEMBLY PRT-3
ELECTRICAL REPLACEMENT PARTS LIST PRT-5

EVF PARTS ASSEMBLY

Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.

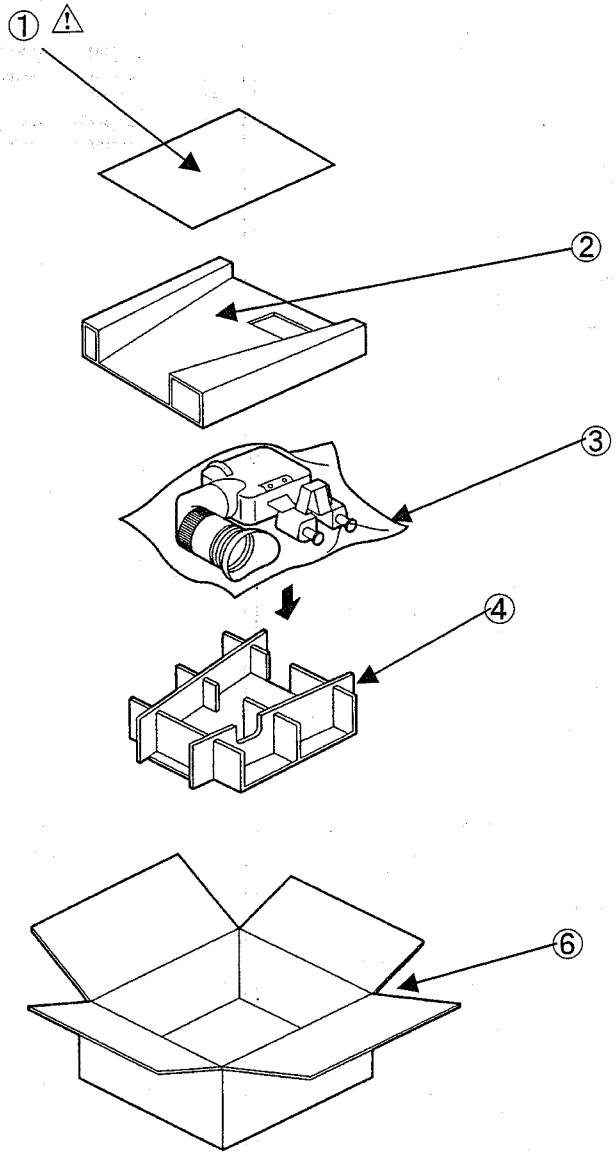


Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VGM1297	UPPER BODY	1	
2	VGL0723	UPPER TALLY	1	
3	VGB0437	PANASONIC BADGE	1	
4	VMP4945	HOLDER PLATE	1	
5	VMX2684	END CAP	1	
6	VMX2537	PIPE SPACER	1	
7	VDB1421	SLIP RING	1	
⚠ 8	ELY15V114G	DEFLECTION YOKE	1	
⚠ 9	M04KYS07WB	CRT	1	
10	VGP4348	ESCUTCHEON (A)	1	
11	VGP4349	ESCUTCHEON (B)	1	
12	VGH3966	CRT NAME PLATE	1	
13	VMX2552	RING	1	
14	VGP4205	CRT CASE	1	
15	VXU1443	RELEASE KNOB ASS'Y	1	
17	VMB3026	RELEASE SPRING	1	
18	VMP5645	MOUNT RING	1	
19	VQL8238	WIDTH ADJUST LABEL	1	
20	VYC0806	EYECAP PIECE U	1	
21	VMG0799	RUBBER CAP	1	
22	VMX1558	NYLON WASHER	2	
23	VGM1458	LOCK BASE	1	
24	VGM1457	LOCK TABLE	1	
25	VGM1456	PLATE (B)	1	
26	VMS6274	PLATE (B)	1	
27	VGM1455	PLATE (A)	1	
28	VMS6221	LOCK SPACER	1	
29	VHD0991	INSERT SCREW	1	
30	VHD0990	LOCK SCREW	1	
31	VGU7714	LOCK LEVER	1	
32	VMS6275	EVF LOCK SHAFT	1	
33	VMB3027	SPRING	1	
34	VMG0970	SW SPACER	1	
35	VMG0975	SW SHIELD RUBBER	1	
36	VGU7352	VR KNOB	3	
37	VMZ2577	INSULATION PLATE	1	
38	VGM1309	LOWER BODY	1	
39	VMP4946	SW MOUNT PLATE	1	
40	VMG0981	RING	3	
41	VJA0838	INPUT CABLE	1	
42	VGH3813	FRONT NAME PLATE	1	
43	VGQ4165	HALF MIRROR HOLDER	1	
44	VDL0417	MIRROR	1	
45	VGF0653	NON REFLECTION SHEET	1	
46	VJF1152	MINI CLAMPER	1	
47	VJF1034	CLAMPER	1	
48	VMP5089	COVER	1	
49	VMS6273	SHAFT (A)	2	
50	VYQ1529	EVF ATTACHMENT ASS'Y	1	
51	VEE9446	CRT SOCKET	1	
52	VGH4106	MASK PLATE	1	
53	VMC1358	PLATE SPRING	1	
54	VDB1421	SLIP RING	1	
55	VMG1123	RAIN COVER CAP	1	
56	VGF0681	PROTECT SHEET (A)	1	
57	VGF0682	PROTECT SHEET (B)	1	
61	XQN26+A4	SCREW	2	
62	XQS2+A6FZ	SCREW	1	
63	XSB26+6	SCREW	4	
64	XSB3+8VZ	SCREW	5	
65	XSB5+8VCK	SCREW	3	
66	XQN2+A3FZ	SCREW	2	
67	XSB2+12	SCREW	2	
68	XSN26+10FZ	SCREW	3	
69	XSS2+4FZ	SCREW	1	
70	XSS26+6FZ	SCREW	2	
71	XTN2+5GFZ	SCREW	8	
72	XYN2+F6	SCREW	1	
73	XYN2+K4	SCREW	2	
74	XYN26+K5	SCREW	6	
75	XNG2B	NUT	2	
76	XXEV2W3FP	HEX SCREW	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
77	XWA3BFZ	WASHER	3	
78	XWA5BFZ	WASHER	1	
79	XXEV16D2FP	SCREW	6	
80	XUC2FP	E-RING	1	
E1	VEP29021A	FRONT TALLY P. C. BOARD	1	
E2	VEP29019A	H-DEF P. C. BOARD	1	
E3	VEP29023C	CRT MASK PC. BOARD	1	
E4	VEP29020A	VR SW P. C. BOARD	1	
E5	VEP29022B	VIDEO P. C. BOARD	1	

Components identified with the mark ⚠ have the special characteristics for safety.
When replacing any of these components, use only the same type.

PACKING PARTS ASSEMBLY



Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
⚠1	VQT8136	OPERATING INSTRUCTIONS	1	
2	VPN5264	CUSHION(UPPER)	1	
3	VPF0210	POLYETHYLENE BAG	1	AJ-VF10P
3	VPF0676	POLYETHYLENE BAG	1	AJ-VF10E
4	VPN5265	CUSHION(LOWER1)	1	
5	VPN5266	CUSHION(LOWER2)	1	
6	VPG0A97	PACKING CASE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP29019A	H-DEF P. C. BOARD	1	(RTL)
■	VEP29020A	VR SW P. C. BOARD	1	(RTL)
■	VEP29021A	FRONT TALLY P. C. BOARD	1	(RTL)
■	VEP29022B	VIDEO P. C. BOARD	1	(RTL)
■	VEP29023C	CRT MASK P. C. BOARD	1	(RTL)
■	VEP29019A	H-DEF P. C. BOARD	1	(RTL)
C9101, 02	ECA1CFQ331	E. CAPACITOR 16V 330U	2	
C9104	ECA1JFQ680	E. CAPACITOR 63V 68U	1	
C9105	VCF0066J103	P. CAPACITOR 160V 0.01U	1	
C9106	VCF0066J332	P. CAPACITOR 3300P	1	
C9107, 08	VCF0066J223	P. CAPACITOR 0.022U	2	
C9110-12	ECKD3A472MEH	C. CAPACITOR 1KV 4700P	3	
C9113	ECA1CFQ121	E. CAPACITOR 16V 120U	1	
C9114	VCF0066J182	P. CAPACITOR 1800P	1	
D9101	MA142K	DIODE	1	
D9102	EC11FS2	DIODE	1	
D9103	MA142K	DIODE	1	
D9104	SHV-03	DIODE	1	
D9105	MA142K	DIODE	1	
D9106	EC11FS2	DIODE	1	
L9101	VLQ0417	COIL 10UH	1	
L9102	ELH5L220	COIL 22UH	1	
L9103	VLQEL06F270J	COIL	1	
L9104	VLQ0620	COIL	1	
P9006	VJP2311	CONNECTOR (MALE)	1	
P9007	VJP1595T	CONNECTOR (MALE) 2P	1	
P9008	VJP1232T	CONNECTOR (MALE) 5P	1	
P9009	VJP2271	CONNECTOR (MALE)	1	
Q9101, 02	2SK1954Z	TRANSISTOR	2	
R9101	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R9102	ERJ3GEYJ105	M. RESISTOR CH 1/16W 1M	1	
R9103	ERDS2TJ222	C. RESISTOR 1/4W 2.2K	1	
R9104	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R9105	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R9107	ERJ6RED300	M. RESISTOR CH 3W 30	1	
R9108, 09	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	2	
R9110, 11	ERJ6GEYG474	M. RESISTOR CH 1/10W 470K	2	
R9112	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R9113	ERJ6GEYG474	M. RESISTOR CH 1/10W 470K	1	
R9114	ERJ6GEYJ684	M. RESISTOR CH 1/10W 680K	1	
R9115	ERJ6GEYG823	M. RESISTOR CH 1/10W 82K	1	
R9118	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R9119	ERJ3GEYJ105	M. RESISTOR CH 1/16W 1M	1	
R9120	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
⚠ T9101	ETF15L7A	TRANSFORMER	1	
TG9101-05	EYF6CU	TEST POINT	5	
VR9101	VRV0113B500	V. RESISTOR 50	1	
VR9102	EVMLRGA00B16	V. RESISTOR 10M	1	
VR9103	VRV0113B105	V. RESISTOR 1000K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP29020A	VR SW P. C. BOARD	1	(RTL)
P9010	VJP2312	CONNECTOR (MALE)	1	
SW9301	VST0114	SWITCH	1	
SW9302	VST0113	SWITCH	1	
VR9301	VRV0278B504	V. RESISTOR 500K	1	
VR9302	VRV0278B102	V. RESISTOR 1K	1	
VR9303	VRV0278B104	V. RESISTOR 100K	1	
		MISCELLANEOUS		
	VMX2539	VR SPACER	1	
■	VEP29021A	FRONT TALLY P. C. BOARD	1	(RTL)
D9501-03	KR5009X-1C	DIODE	3	
		MISCELLANEOUS		
	VMP4945	HOLDER PLATE	1	
	XYN2+F6	SCREW	1	
■	VEP29022B	VIDEO P. C. BOARD	1	(RTL)
C9001	ECA1CFQ331	E. CAPACITOR 16V 330U	1	
C9002	ECA0JKF121	E. CAPACITOR 6.3V 120U	1	
C9003-06	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	4	
C9007	ECA1CKF560	E. CAPACITOR 16V 56U	1	
C9008	ECST1CY105Z	T. CAPACITOR CH 16V 1U	1	
C9009	ECUX1E223KBV	C. CAPACITOR CH 25V 0.023U	1	
C9010	ECST1CX106Z	T. CAPACITOR CH 16V 10U	1	
C9011	ECST1CY105Z	T. CAPACITOR CH 16V 1U	1	
C9012	ECST1CC226Z	T. CAPACITOR CH 16V 22U	1	
C9013	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9014	ECUX1H682KBV	C. CAPACITOR CH 50V 6800P	1	
C9015	ECHU1C472JB	P. CAPACITOR 16V 4700P	1	
C9016	ECUX1H331JCV	C. CAPACITOR CH 50V 330P	1	
C9017	ECUX1C473KBV	C. CAPACITOR CH 16V 0.047U	1	
C9018	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C9019	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9020	ECST1CY105Z	T. CAPACITOR CH 16V 1U	1	
C9021	ECST1CY335Z	T. CAPACITOR CH 16V 3.3U	1	
C9022	ECUX1H472KBV	C. CAPACITOR CH 50V 4700P	1	
C9023	ECUX1H181JCV	C. CAPACITOR CH 50V 180P	1	
C9024	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9025, 26	ECA0JKF121	E. CAPACITOR 6.3V 120U	2	
C9027	ECST1CX106Z	T. CAPACITOR CH 16V 10U	1	
C9028	ECUX1H272KBV	C. CAPACITOR CH 50V 2700P	1	
C9029	ECA1CKF560	E. CAPACITOR 16V 56U	1	
C9030	ECUX1H221JCV	C. CAPACITOR CH 50V 220P	1	
C9031	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9032	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C9033	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9034	ECST1AC226Z	T. CAPACITOR CH 10V 22U	1	
C9035	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9036	ECA1CKF560	E. CAPACITOR 16V 56U	1	
C9037	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9039	ECUX1H820JCV	C. CAPACITOR CH 50V 82P	1	
C9041	ECUX1H221JCV	C. CAPACITOR CH 50V 220P	1	
C9042	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9044	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9045	ECUX1H010CCV	C. CAPACITOR CH 50V 1P	1	
C9046	ECA1JFQ680	E. CAPACITOR 63V 68U	1	
C9047	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	1	
C9049	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C9051	ECUX1H150JCV	C. CAPACITOR CH 50V 15P	1	
C9055	ECA1EKF390	E. CAPACITOR 25V 39U	1	
C9056	ECA1CKF560	E. CAPACITOR 16V 56U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C9057	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	1	
C9058, 59	ECUX1E104ZFV	C. CAPACITOR CH 25V 0.1U	2	
C9060	ECQV1104JM	P. CAPACITOR 0.1U	1	
D9001	MA142K	DIODE	1	
D9002	RD10UMB1	DIODE	1	
D9003	MA143	DIODE	1	
D9005	MA143	DIODE	1	
D9007, 08	MA3047	DIODE	2	
DL9001	VLD0259	DELAY LINE	1	
IC9001	AN77L05M	IC	1	
IC9002	HA11423MP	IC	1	
IC9003	TC7S04F	IC	1	
IC9004	TC7S32F	IC	1	
IC9005	MC74HC164AF	IC	1	
IC9006	M66311FP	IC	1	
IC9007	MC74HC08AF	IC	1	
IC9008	TC7W04F	IC	1	
IC9009	AN8008M	IC	1	
P9001	VJP2741A016	CONNECTOR (MALE) 16P	1	
P9002	VJP2312	CONNECTOR (MALE)	1	
P9003	VJP2311	CONNECTOR (MALE)	1	
P9004	VJP2279	CONNECTOR (MALE)	1	
P9005	VJP1595T	CONNECTOR (MALE) 2P	1	
Q9001-03	2SD1819A-R	TRANSISTOR	3	
Q9004	2SC3624	TRANSISTOR	1	
Q9005	2SA1411	TRANSISTOR	1	
Q9006-08	2SD1819A-R	TRANSISTOR	3	
Q9009	2SC3624	TRANSISTOR	1	
Q9010	2SA1411	TRANSISTOR	1	
Q9011	2SD1819A-R	TRANSISTOR	1	
Q9012	2SB1218A-R	TRANSISTOR	1	
Q9013	2SK508-B	TRANSISTOR	1	
Q9014	2SB1218A-R	TRANSISTOR	1	
Q9015	2SD1821-R	TRANSISTOR	1	
Q9016	2SC4181	TRANSISTOR	1	
Q9017	2SD1821-R	TRANSISTOR	1	
Q9018	2SB1220-R	TRANSISTOR	1	
Q9019	UN511L	TRANSISTOR-RESISTOR	1	
Q9020	UN5214	TRANSISTOR-RESISTOR	1	
Q9021	2SD1819A-R	TRANSISTOR	1	
Q9022	2SC4181	TRANSISTOR	1	
R9000	ERDS2TJ681	C. RESISTOR 1/4W 680	1	
R9001	ERJ12YJR68	M. RESISTOR CH 1/2W 0.68	1	
R9002	ERJ3GEYJ474	M. RESISTOR CH 1/16W 470K	1	
R9003	ERJ3GEYG822	M. RESISTOR CH 1/16W 8.2K	1	
R9004	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R9005	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R9006	ERJ3GEYJ102	M. RESISTOR CH 1/16W 1K	1	
R9007	ERJ3GEYJ100	M. RESISTOR CH 1/16W 10	1	
R9008	ERJ3GEYJ121	M. RESISTOR CH 1/16W 120	1	
R9009	ERJ3GEYJ183	M. RESISTOR CH 1/16W 18K	1	
R9010	ERJ3GEYG682	M. RESISTOR CH 1/16W 6.8K	1	
R9011	ERJ6RBD123	M. RESISTOR CH 1/10W 12K	1	
R9012	ERJ3GEYJ683	M. RESISTOR CH 1/16W 68K	1	
R9013	ERJ3GEYG822	M. RESISTOR CH 1/16W 8.2K	1	
R9014	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R9015	ERJ3GEYJ912	M. RESISTOR CH 1/16W 9.1K	1	
R9016	ERJ3GEYJ102	M. RESISTOR CH 1/16W 1K	1	
R9018	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5.6K	1	
R9019	ERJ3GEYG682	M. RESISTOR CH 1/16W 6.8K	1	
R9020	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5.6K	1	
R9021	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R9022	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R9023	ERJ3GEYJ4R7	M. RESISTOR CH 1/16W 4.7	1	
R9024	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R9025	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R9026	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R9027	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R9028	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R9029	ERJ3GEYJ393	M. RESISTOR CH 1/16W 39K	1	
R9030	ERJ6RBD472	M. RESISTOR CH 1/10W 4.7K	1	
R9031	ERJ3GEYJ221	M. RESISTOR CH 1/16W 220	1	
R9032	ERJ3GEYJ102	M. RESISTOR CH 1/16W 1K	1	
R9033	ERJ3GEYJ150	M. RESISTOR CH 1/16W 15	1	
R9034	ERJ3GEYJ224	M. RESISTOR CH 1/16W 220K	1	
R9035	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R9036	ERJ3GEYJ181	M. RESISTOR CH 1/16W 180	1	
R9037, 38	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	2	
R9039	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R9040	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R9041	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R9042	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R9043	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R9044	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R9045	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R9046	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R9047	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R9048	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R9049	ERJ6RBD223	M. RESISTOR CH 1/10W 22K	1	
R9050	ERJ3RBD152	M. RESISTOR CH 3W 1.5K	1	
R9051	ERJ3RED124	M. RESISTOR CH 3W 120K	1	
R9052	ERJ6RBD104	M. RESISTOR CH 1/10W 100K	1	
R9053	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R9055	ERJ6RBD102	M. RESISTOR CH 1/10W 1K	1	
R9056	ERJ6RBD681	M. RESISTOR CH 1/10W 680	1	
R9058	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R9059	ERJ6RBD102	M. RESISTOR CH 1/10W 1K	1	
R9060	ERJ6RBD222	M. RESISTOR CH 1/10W 2.2K	1	
R9061	ERJ3GEYJ391	M. RESISTOR CH 1/16W 390	1	
R9063	ERJ6RBD682	M. RESISTOR CH 1/10W 6.8K	1	
R9064, 65	ERJ6RBD222	M. RESISTOR CH 1/10W 2.2K	2	
R9066	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R9067, 68	ERJ6RBD562	M. RESISTOR CH 1/10W 5.6K	2	
R9069	ERJ6RBD473	M. RESISTOR CH 1/10W 47K	1	
R9071	ERJ6RBD473	M. RESISTOR CH 1/10W 47K	1	
R9072, 73	ERJ3GEYJ680	M. RESISTOR CH 1/16W 68	2	
R9074	ERJ3RBD561	M. RESISTOR CH 3W 560	1	
R9076	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R9077	ERJ3GEYJ1R0	M. RESISTOR CH 1/16W 1.0	1	
R9078	ERJ3GEYJ470	M. RESISTOR CH 1/16W 47	1	
R9079, 80	ERJ3GEYJ272	M. RESISTOR CH 1/16W 2.7K	2	
R9081	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R9083	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R9085	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R9087, 88	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	2	
R9089	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R9090	ERJ3GEYJ331	M. RESISTOR CH 1/16W 330	1	
R9092	ERJ3GEYJ512	M. RESISTOR CH 1/16W 5.1K	1	
R9093	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R9095	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R9096	ER0S2CKF8201	M. RESISTOR 1/4W 8.2K	1	
R9097	ERJ3RBD222	M. RESISTOR CH 3W 2.2K	1	
R9098	ERJ3RBD912	M. RESISTOR CH 3W 9.1K	1	
R9099	ER0S2CKG1003	M. RESISTOR 1/4W 100K	1	
TG9001	EYF6CU	TEST POINT	1	
TP9001-03	EYF6CU	TEST POINT	3	
VR9001, 02	EVM7JGA00B53	V. RESISTOR 5K	2	
VR9003	EVM7JGA00B22	V. RESISTOR 200	1	
VR9004	EVM7JGA00B52	V. RESISTOR 500	1	
■	VEP29023C	CRT MASK P.C.BOARD	1	(RTL)
D9401	PG1101W330	DIODE	1	
D9402	BR1101W330	DIODE	1	
D9403	PG1101W330	DIODE	1	
D9404	AA1101W330	DIODE	1	
D9405	BR1101W330	DIODE	1	
D9406	AA1101W330	DIODE	1	
	VMP5140	CRT EARTH PLATE	1	